

Optimizing an integrated production and quality strategy considering inspection and preventive maintenance errors

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Abstract

Preventive maintenance is implemented following the inspection point is reached given an imperfect and controlled production process. Generally, estimation errors in inspection and preventive maintenance are ignored in inspection and preventive maintenance models. Where estimation errors exist in inspection and preventive maintenance in an imperfect production process this study attempts to discuss the range of estimation errors and their influence on the number of inspection times, first inspection interval, production lot size and expected costs of the manufacturer. Finally, the numerical example is used to examine and analyze production strategy optimization.

Keywords and phrases : Inspection error, maintenance error, imperfect process, first inspection interval.

1. Introduction

The conventionally adopted *Economic Production Quantity* (EPQ) models assume that the products made are good quality [14]. However, real production cases might initially be in an under-control state and later

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Journal of Information & Optimization Sciences

Vol. 27 (2006), No. 3, pp. 577–593

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0252-2667/06 \$2.00 + 0.25